

**ENEE 381, Spring 2004. Homework Set 2**

**Due March 4, 2004**

- (1) Cheng 7-3
- (2) Cheng 7-19
- (3) Cheng Problem 7-25
- (4) Cheng Problem 7-26
- (5) Cheng Problem 7-27
- (6) The electric field of a plane wave is

$$E_x = 100 \cos(\omega t - \pi/6).$$

Its magnetic field in a medium with  $\mu_r=1$ ,  $\epsilon_r=12$  is

$$H_y = H_0 \cos(\omega t + \pi/4).$$

What is the magnitude  $H_0$ ?

What is the time averaged Poynting vector?

- (7) The electric field of a plane wave is

$$E_x = E_0 e^{(\omega t - \pi/12)}.$$

Its magnetic field in a medium with  $\mu_r=1$ ,  $\epsilon_r=12$  is

$$H_y = 100 e^{(\omega t + \pi/7)}.$$

What is the magnitude  $E_0$ ?

What is the time averaged Poynting vector?

- (8) Cheng 8-6
- (9) Cheng 8-16
- (10) Cheng 8-18